

**Remote learning behavioral study: An observational study among students in the
pre-k, elementary and middle school age groups**

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Abstract

Researchers wanted to identify possible concerns and trends arising during COVID-19 remote learning. The problem is, many schools, students, and students' families were thrown into remote learning without much preparation for the sudden change in education made necessary by a pandemic. We sought to investigate non-academic areas in which the pandemic impacted the lives of children such as nutrition, socialization, and physical activity. Hopefully, this article raises questions about the phenomenon of remote learning. It is intended to be a tool of observation to ask questions, not answer them.

Keywords: Education during COVID-19, observational study, remote learning.

Introduction

The COVID pandemic brought about challenges most in our generation have never faced. Challenges to our health were myriad. Challenges to our psyche as we had to distance from family, friends, and loved ones were wearing. The psychological impact of not being with those we hold dear during times of illness and even death was profound. Yet we as a society were expected to go on. We were to live, thrive, and even still become educated—while everything around us shut down. It was a time where the world seemingly stopped.

Globally, as of 4:12pm CEST, 25 June 2021, there have been 179,686,071 confirmed cases of COVID-19, including 3,899,172 deaths, reported to the WHO (World Health Organization). As of 24 June 2021, a total of 2,624,733,776 vaccine doses had been administered. (WHO, 2021, p. 1)

As of 25 June 2021, there had been 33,425,231 confirmed cases in the USA, including 600,859 deaths, as reported by the CDC (Centers for Disease Control).

As of 24 June 2021, a total of 65.8% of the population of the USA has had at least one vaccine administered. (CDC, 2021)

The first COVID 19 case in the U.S. was cited by the American Journal of Managed Care to have occurred in the state of Washington, January 15, 2020 (AJMC Staff, 2021). Little did we know how much worse things would become. Shortly thereafter we saw the world turn upside down. Travel restrictions began and then became more prolific. First, international travel was restricted and, subsequently, airports became ghost towns where even the briefest of domestic flights was either cancelled or at best, postponed.

Businesses and then even some government offices started to shut down, and with that a new word entered our common speak—*essential*. Only businesses delineated as essential were allowed to remain open, and even schools began locking their doors and bracing for the worst. Certain individuals were allowed to work, and those were few and far between, again with the title “essential” being required for one to go to work without penalty and/or disparagement—and even then, many businesses in the United States were closing their doors. The economy began to falter, and the country appeared headed in dire straits. We were all told to quarantine and only leave our homes for “essential” supplies such as food and pharmaceuticals. Subsequently, the rest of the world pretty much followed suit, and soon the entire globe was in the throes of the infamous COVID 19 pandemic.

School districts all over the world, and in the United States specifically, began to panic. Initially, most closed their doors. Then the idea came that perhaps we could utilize what technological savvy we had to formulate an alternative. Thus, the birth of COVID-19 remote learning came to be. Some schools tried to maintain a sense of normalcy and still had classes with very few students on particular days. Others decided to implement remote learning strategies purely and keep children home with parents doubling as teachers, although many parents were also dealing with sick relatives, anxiety from the pandemic, job security woes, and other troubles. Still other schools agreed on hybrid-type arrangements, attempting to keep parents engaged on those days the children were home, and on other days children would attend classes onsite at their individual schools. Still in all, many made this new learning modality work, or at least it seemed so.

The purpose of this small observational study was to spot clues as to what some may or may not view as potential trends (and possibly pitfalls) arising during the practice of COVID-19 remote learning. The thrust of the findings have less to do with direct academic considerations as they do with some mundane behaviors such as those pointing to a lack of socialization and physical activity, as well as perhaps spotting other behaviors that may have developed while children were forced to learn often in front of a screen. The intention was to pave the way for others to ask basic questions by conducting generalizable studies commensurate with those observations, so that if we find ourselves in a similar scenario again, we will have learned from our missteps.

Training Industry (2021) defined *remote learning* as follows:

Remote Learning occurs when the learner and instructor, or source of information, are separated by time and distance and therefore cannot meet in a traditional classroom setting. Information is typically transmitted via technology (email, discussion boards, video conference, audio bridge) so that no physical presence in the classroom is required; otherwise, it would be *Hybrid or Blended Learning*. *Remote learning can occur synchronously or asynchronously. Also referred to as *Distance Education, Virtual Instruction, or Remote Training*. (para. 1)*

Literature Review

Fleming (2020) investigated the phenomenon that some children seemed to be thriving during remote learning. Inasmuch as one of her observations came from a teacher, Monique Woodward, who told about a boy who was the class clown and impacted his 23 classmates, five of whom were boys. However, as his experience with

remote learning began to evolve, the class clown began to thrive academically.

Woodward noted she believed his success was due, in part, to the fact he could focus on his work rather than on the social things going on around him. She also noted that students who were victims of bullying found it easier to learn, partly because home provided a safe place for learning without fear. Furthermore, Fleming mentioned the fact that students could learn more effectively with more sleep and later school hours or optional work times. Fleming also noted that remote learning adjusted schedules, so students have opportunity for more sleep and to work within their own timeframes, which appeared to give a boon to learning. Fleming did mention one negative aspect related to remote learning in that expectations may have been lowered to make work doable for both parents and students.

The COVID-19 pandemic not only affected schools in the United States, but Palestine also reported its own challenges. Khlaif et al. (2021) outlined the following three components influencing student's engagement in online learning, which can ultimately contribute to the success or failure of remote learning: social support, quality of the content, and self-efficacy of the student. Moreover, Khlaif et al. expressed the prevailing belief that the existing technology was insufficient to support the learning expectations placed upon their students. These inequities provided limited or intermittent technology, which prohibited the necessary peer access. In addition to frustrating students, these inequities caused great consternation among teachers who felt their lessons were lack-luster and ill-prepared to facilitate effective student learning.

As the world dealt with COVID, teachers, parents, and students dealt with the dilemma of how to make education work for students. Logan et al. (2021) believes that

teachers were expected to deliver synchronous and asynchronous education as well as to deliver education without use of the internet and related technology. One hundred twenty-two parents were surveyed as to how they believed the school system could best serve them as they became the primary instructors of their children. Lockdowns imposed on so many communities, as well as the lack of support sensed by many families served to intensify the frustrations held toward the remote learning experience. Additionally, homes where both parents worked, or one parent was absent also served to compound the situation.

Krauthamer (2020) is a veteran Blackboard user and so with the arrival of COVID19, she transitioned well to the varying forms of delivering remote learning. As she navigated her way through this maze of learning, she took with her several take-aways:

Learning does not necessitate that teachers and students attend a formal face-to-face educational setting. Student athletes and others missing for varying reasons are always able to attend class and never need to miss out on instruction. (This also negates excuses for missing assignments, since they are easily completed and submitted for grading.) Computer viewing helps keep students engaged and encourages higher levels of involvement, since many of them are digital natives. Power points encourage a higher level of involvement particularly when they are interactive. Student presentations were achieved at a higher level of excellence, particularly since many students had a plethora of technology and knowledge concerning its use at their disposal, particularly at the higher levels of education, Krauthammer (2020).

Effects of the 2020 COVID pandemic were also felt throughout Europe.

Seabra et al (2022) shares that school systems in Portugal turned to what was deemed “emergency remote learning”. Two-hundred-three parents were surveyed via a questionnaire concerning their students who ranged from preschool to secondary school. There was overall satisfaction, but parents felt that the workload could be somewhat daunting, particularly for those who worked from home. Downsides to remote education noted by a number of parents were digital inequity, and need for greater level of instruction via policies that enabled them to meet the expectations of the school systems. Use of technology was a given if remote education was to be feasible. And as in other areas of the world, the digital divide was a great obstacle to overcome if remote learning was going to be possible. A major obstacle that had to be overcome was the inadequacy of both students and teachers to navigate the digital world, particularly since it appeared to be an anomaly in the classroom.

According to Loukomies, Juuti (2021), Finland, like Portugal, faced challenges with regard to remote learning. To gauge the efficacy of remote education adopted by schools in Finland, 23 Finnish fifth graders were selected by experience sampling. In experience sampling, participants are asked to record their feelings, thoughts, behaviors, etc. throughout the day or a period of time. The researchers chose to have the students utilize instant video blogging (IVB). The time period chosen was March 18, 2020-May 3, 2020. The researchers reported that students appeared to use stronger language to express negative emotions than they did positive emotions.

Generic terms frequently appeared in their blogs and students were also off-put by instructions they felt were ambiguous. It was determined that ambiguity in a remote setting could hamper effective learning and achievement resulting in a negative outcome.

As they neared the ending of the experiment, students began to express the possibility of returning to school in more positive language. Perhaps this is a reflection that one of the most important aspects of face-to-face school is social interaction. The researcher planned to utilize this information to be better prepared for remote education should the need ever arise, particularly as it related to clearer instructions and working devices.

Other articles perused by the researchers, as well as observations of remote learners, brought out similar themes both here in the United States and in other areas of the world Khlaif et al. (2012); Igielnick (2021). Parents were frustrated with holding down a job while being responsible to teach. Many parents were concerned about the quality of education that their children were receiving. Digital inequities were another concern. Truly, education had changed and demanded adaptations and patience on all fronts Van Dijk, (2021).

Many areas of the western world faced challenges as they turned to remote education. Just as the medical community appeared to be blindsided by the the arrival of COVID19, so the educational community was left unprepared for the challenges they would meet in the face of the pandemic. They found themselves scrambling to navigate uncharted waters to provide the best education they could for their students. Notably, reactions of students, teachers, and parents were similar throughout the western world. If anything, the responses of teachers and stakeholders demonstrated the necessity of being prepared to provide appropriate and quality instruction should the need again, arise by remembering the effectiveness of various methods and needs which best serve their students.

Not as much has been written on the impact of remote learning on the children themselves with regard to nutrition, socialization, and physical activities. In an attempt to do limited qualitative research on this phenomenon, the researchers administered a questionnaire to families who volunteered to participate. Following a brief explanation of our methodology, we share some anecdotes, revealed by the questionnaire.

Research Question

The study was guided by the following research question: What are some general observations that can be made for pre-k and elementary age children who engaged in the COVID pandemic remote learning experience?

Methodology

The problem is many schools, students, and students' families were thrown into remote learning without much preparation for the sudden change in education made necessary by a pandemic. The purpose of this study was to make some basic observations and begin to scratch the surface of asking how this sudden change in education affected students in areas other than academics. In this study the researchers sought to examine the behaviors adopted by students as they adapted to in-home or remote learning. This was an informal study intended to probe and observe a select group of remote learners. Convenience sampling was utilized, sharing about our questionnaire with families we knew (friends and acquaintances), who were experiencing remote learning. For the nine parents who expressed interest in participating, we sent a link to a questionnaire via Google. These parents then used the questionnaire to interview their children, working together to respond and provide data for the study. Questions about physical activity,

communication with friends/classmates, socialization, and nutrition were asked. We informed participants they could withdraw from the study at any time. Most of the participants were from the Eastern States. We recorded responses to the questions in a Google spreadsheet. We then wrote narratives based on these responses, as well as compiled numerical or descriptive statistics (see table).

Case studies from the children

Remote learning differed from family to family. Some school systems had planned well for the transition to remote learning and offered more structures than other school systems. Some school systems afforded students and families more flexibility with options, deadlines, grading. These are stories of students, identified by pseudonyms, and their habits, both study and personal, during this unprecedented time.

James

James is an eighth grader. On remote days, he had a half day of learning (7:55 a.m. to 11:30 a.m.), with no breaks. He wore his pajamas during this time. He sat down but got up to move around twice. He ate meals on those days. On remote learning days, he did go to activities outside his home. He also played outside for an hour a day. He played video games every day for about two hours. He talked to his friends on remote learning days by calling them. Some days he was able to see his friends face to face. He had no comments about his experience with remote learning.

Anna

Anna is a third grader. She got dressed for school and performed her virtual schooling activities, sitting down but did get up to move more than twice during the school session. She ate meals rather than snacking. She did not attend activities outside

her home on remote learning days. On these days, she played outside for an hour a day. She also played video games during breaks and at lunch time for 15 to 20 minutes at a time apart from school. She did not see her friends on remote learning days. Her schedule on those days followed a typical school day: morning work/reading/specials/language/lunch and recess/math/reading or science. She made no remarks regarding her experiences with remote learning.

Emily

Emily is a Pre-K student who continued in school for the duration of the COVID closure. Wednesday was her one remote day. On remote learning days, she awakened between 7:00 and 7:30 a.m... From 7:30 until 9:00 a.m., she got dressed, ate breakfast, and played video games on the tablet. Then from 9:00 until 9:25 a.m., she zoomed with her class. In the Fall from 9:30–10:00 a.m., she zoomed with other classmates for specials. Specials were entirely optional, and interest based. After that Emily had no interest, so she ceased doing Zooms during that time. After ceasing the Zoom sessions, she would play with toys, video games, color, or go outside. At 12:00 p.m., they had lunch. From 1:00 until 3:00 p.m., Emily would play, engaging in the same activities as she did in the morning. From 4:00 until 6:00 p.m., she had karate. Between karate and AWANA they would do dinner on the run since AWANA started at 7:00 p.m. and lasted until 8:30 p.m.. Once they were home, she was in bed by 9:00–9:30 p.m.. (AWANA is a religious extracurricular program.)

Susan

Susan is a Kindergarten student. She stayed in her pajamas and her meals consisted of snacks throughout the day. Her schedule for the day was as follows: 8:00

a.m.. wake up and have breakfast; 8:30–9:30 a.m.. Zoom meeting; 11 .–12 p.m. second Zoom session; 12 p.m.. lunch; 1:30 p.m.. third Zoom session. Susan never went to activities outside the home on remote learning days. She never played outside on these days. She did not play video games. On these days, she did not see her friends, nor did she have any means of chat with them. Her mother added:

On remote learning days we occasionally went to the park, but most days were spent at home. Susan still went to her church activities on the nights she had them, but she never spoke to her Kindergarten friends when she was not actually in class in person.

Peter

Peter is a sixth grader. In his virtual schooling, he was expected to log in to his virtual classroom by 8:09 a.m., but he was finished for the day by 12:09 p.m.. Sometimes, he dressed for school, but sometimes he did school in his pajamas. Meals during the virtual learning days consisted of snacks. He did move around twice during the time school was taking place. He enjoyed being outside and started playing baseball. He was outside in unstructured play for approximately 2 hours each day. He did not appear to be particularly interested in video games but played them up to 2 hours a day unless he was able to go outside. He remained in contact with his friends, primarily by text and FaceTime. He said of his remote learning experience, “I like to make learning fun by paying attention and talking to my friends when I’m on mute.”

Simon

Simon is a fifth grader. He sat down to complete his schoolwork; however, he did move around more than three times during the school session. He did stay in his pajamas,

and his meals consisted of snacks throughout the day. He did not go to activities outside the home on these days, but he did play outside, usually for more than 3 hours a day. He also played video games for 3 hours a day. He had no contact with his friends on remote learning days. Apparently, he had no set schedule on remote learning days, with these days consisting primarily of meetings and independent work.

Trevor

Fourth grader, Trevor, had a set schedule as follows: 8:00 a.m. Zoom call; 9:00 a.m. reading Zoom; Break; 11:00 a.m. math Zoom and then lunch and whatever specials were offered. He remained seated while he completed his work but got up to move more than three times during the learning time. He snacked rather than eating meals during the learning time. He did not attend activities outside the home on remote learning days, but he did play outside and played video games for one hour and over two hours, respectively. He talked to his friends regularly on these days, usually by calling them, sometimes by video. He also enjoyed the chat feature for typing messages to friends on Roblox (2021), a popular gaming platform. He really does not ‘call’ friends on the phone.

Zane

Zane is a fourth grader. He had a set schedule whereby he must log-on by 8:09 a.m., and would finish his school day by noon. However, during some days, the class would go past noon by 9 minutes. (For some reason that 9 minutes makes a big difference to a fourth-grade boy.) He preferred sitting to standing during school hours but did get up to move around twice during instructional time. On days he was allowed, he appeared to remain in his pajamas for school. He also noted that he does not play outside

at all during remote learning days. He appeared to prefer playing video games with a limit of 2 hours a day. He did engage with friends outside of his school hours utilizing Google Meet Chat. However, he did not have face to face contact with his friends on these days. He offered no comments on his feelings regarding his experiences with remote education.

Carter

Carter is a second grader. On some days Carter's whole class was remote; on other days he was home for cohort. Each Wednesday the whole school was virtual for deep cleaning day. On Wednesday, he and the other students had "specials." On remote days, he got up at 7:00 a.m. and played video games while he waited for breakfast. At 7:30 a.m., he ate breakfast then dressed and readied himself for the day. Next on the agenda, Carter went with his mom to drop off his sister at school. At 9:00 a.m., he logged on to Zoom with the rest of his class and his teacher. The class appeared to be well-paced. Lunch was scheduled during the day, as was a snack. After lunch, he went with his mom to pick up his sister from school. Once they were back home, he zoomed with his class from 1:15 until 2:00 p.m.. He played outside at 3:00 p.m. until it was time for Karate, which lasted from 4:15 until 6:00 p.m.. Carter had karate three days a week.

On some days Carter was home for cohort. On these days, the schedule changed and other students were in the classroom. He still awoke at 7:00 a.m.. on those days as he did on days when he met with the whole class. He played video games and had breakfast until he logged on to homeroom Zoom. From 9:30 until 11:45 a.m. he was primarily engaged in seat work, which consisted mainly of journal and about five ELA assignments. The day had breaks in between for snacks and play. From 11:45 until 12

noon, he had lunch, after which he went to pick up his sister at school. Then he and his sister played video games, outside, or in the toy room. Next, from 1:30–2:30 p.m., he had a Zoom math class. As of the writing of this case study, he had added baseball two nights a week to his schedule. His mother commented that he saw friends from school at baseball.

On Wednesdays, the entire school was closed for deep cleaning while the kids had specials. As with other days, Carter awakened at 7:00 a.m., and played video games and had breakfast. By 9:00 a.m., he was ready to log into Zoom home room. From 9:20 until 9:30 a.m., he had a break. Then from 9:30–10:00 a.m, he had an optional Zoom with music, STEAM, or a gym teacher. These changed weekly. From 10–11a.m., he had a break where he could engage in free play and enjoy an outside snack. From 11–12 noon, sometimes 11–1p.m, he completed gym, music, and STEAM assignments. Then he was allowed to play for 3 hours: outside, toys, or video games. From 4:15–6:00 p.m., he had Karate, and then dinner on the run. From 7:00–8:30 p.m., he had AWANA (a religious extra-curricular program). By 9:00 p.m., they were home where Carter had a snack and got ready for bed. As has been evidenced, Carter had a busy and structured schedule. Carter always dressed for school, whether it was regular or remote school.

Discussion

The United States was not alone in having its school systems impacted by the COVID pandemic; with the youngest students facing the greatest loss in terms of education, as was corroborated by Logan, et. al (2021). Logan noted that teachers were expected to deliver both synchronous and asynchronous instruction. Parents of these students also met similar challenges as those observed by the researchers who noted that students were

somewhat reluctant to engage in technology for educational purposes, preferring at times to chat with their friends.

It is a known fact that students of the twenty first century are digital natives. Krauthammer was adamant about the use of technology in emergency remote education. As noted in the literature review, Krauthammer touted the advantages of technology in remote education. However, in the opinion of the researchers, the advantage noted in her article seemed to pertain mainly to secondary and post-secondary education, although certain points can be adapted to the lower grades, particularly utilizing power points for students who miss class for illness and other circumstances.

We mentioned little in the study regarding parents' feeling toward the workload, but, it was an issue as noted by Seabra, et. al (2022) in their study which was done in Portugal. Also mentioned in this study was the digital divide. Neither issue surfaced in our study. Perhaps, this is indicative of socio-economic status of the participants.

Loukomies and Jutti (2021) presented a unique means of students expressing their thoughts, feelings, and experiences regarding emergency remote education, that of video blogging. Students would electronically record themselves as they discussed their experiences. This allowed the researchers to see body language and facial expressions. Such a method would have added depth to the study at hand.

Regardless of students' thoughts and feelings as well as preparation of teachers during this unprecedented time, students, teachers, and parents paid a high price to enact methods of instruction that would work for each student. As schools began to reopen, it can be assumed that some students returned reluctantly having grown accustomed to the ease and informality of school at home, while others were quite possibly eager to see

their friends, returning willingly. In any case, it would still seem that the draconian efforts enacted to quell the pandemic have come at a price, and students world-wide might well feel its effects for years to come.

Our case studies were written late 2020. However, during a recent check with some of the families, it was indicated that the children continue to maintain albeit variations of similar remote schedules when schools have switched again to remote learning or a hybrid, as the onset of virus variants necessitate commensurate school closures and/or adjustments.

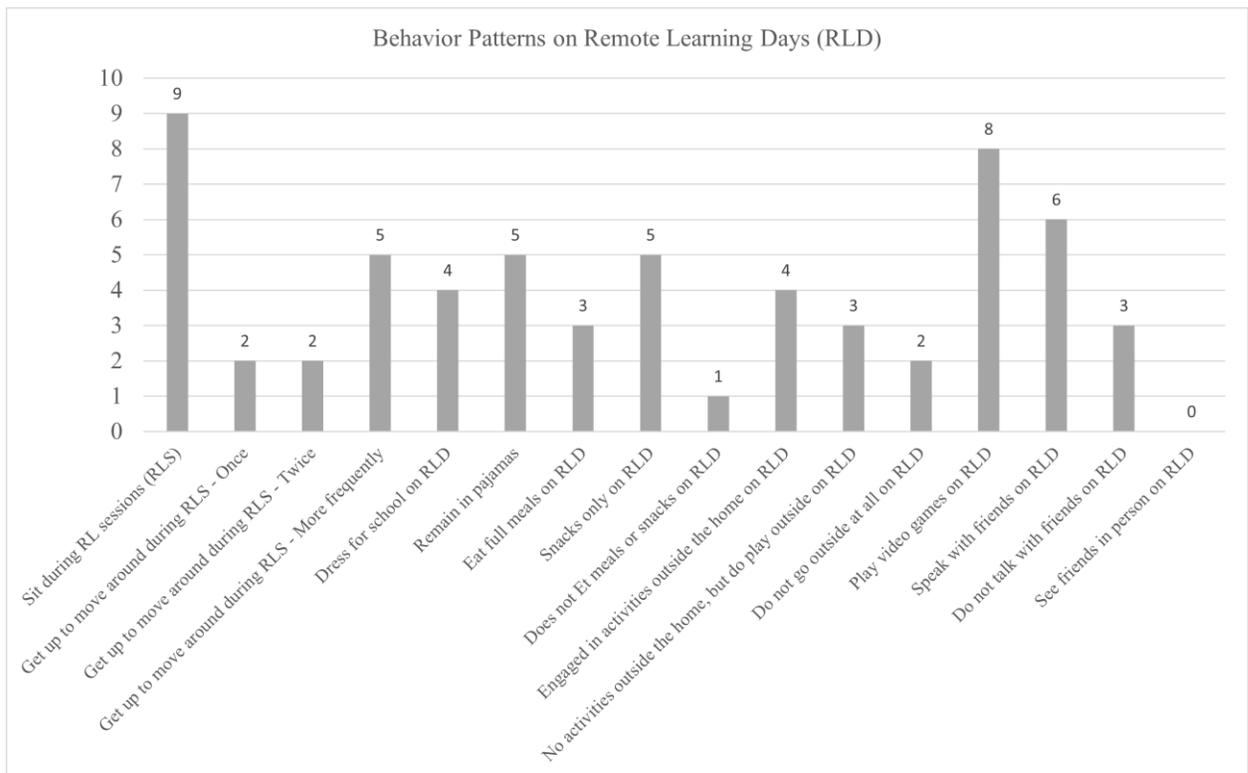
A total of nine volunteer families experiencing remote participated in the study. Parents interviewed their children using the questionnaire as a guide. Six participants were elementary school level (i.e., K through Grade 5), two participants were middle school (one was in Grade 6, one was in Grade 8), and one participant was pre-K (4 years old). Questionnaire results are summarized as follows (see Figure 1).

- All nine remote learners sit when they are learning remotely.
- Two learners get up and move around one time throughout their remote learning sessions; 5 indicate they move around more than 1 time; 2 indicate getting up two times while engaging in remote learning.
- Five learners do not get dressed on remote learning days; 4 learners do.
- Five learners only eat snacks on remote learning days; 1 eats neither meals nor a snack; 3 eat full meals on remote learning days.
- Five are not engaged in activities outside the home during remote learning days; 4 are and of the 5 that are not, 2 of those also do not go outside at all on remote days.

- Eight of the 9 remote learners play video games during remote learning days. Of the 8 participants playing video games, all played a minimum of one hour and some, a maximum of 3 hours.
- Three participants do not speak with friends during remote learning days and 6 do speak with friends.
- No one sees their friends in person on remote learning days.

Figure 1

Behavior Patterns on Remote Learning Days (RLD)



Implications of the Study

From these highlights the following should be noted pertaining to this specific group of participants.

1. Socialization seems to be lacking as none of the participants see friends on remote learning days, and a majority are not engaged in activities outside the home.
2. The sedentary activity of sitting coupled with the lack of physical activity overall is evident.
3. The majority of participants are eating snacks in place of balanced meals.
4. With the exception of one participant, students are playing video games on remote learning days.
5. It is not known at this time, but it is possible that the idea of not having the children get dressed for virtual learning, may play a part in creating an incentive for the children not to want to go back to “normal school.”

Limitations

This study is not generalizable for several reasons. The sample size is very small, there was no random selection or sampling, and the subjects came from one general location, although schools and situations varied. Additionally, the data was self-reported, which may lead readers to question the veracity of the responses. Finally, although some exists, there is not an abundance of prior research on the subject since COVID 19 remote learning specifically, is a new phenomenon. This therefore gives little room for comparison. Based on the above, the study must be considered only observational.

Conclusion and Perceived Implications

Notwithstanding the study might be better described as a casual recording of observations, it does provide some interesting and worthwhile take-aways. As indicated, the limitations are obvious, however, some of the trends within these settings were

concerning and may need to be looked at further utilizing formal study methodologies. Students' physical lack of movement, perhaps proper nutrition, lack of socialization, as well as possibly other behaviors- should be considered. The COVID-19 pandemic forced people into their homes for refuge and protection, as well as for learning. COVID-19 also provided a unique opportunity for parents/guardians to act as home educators via the venue of remote learning. Many more studies are needed in the areas of concern above and possibly even others to investigate oversight, deficits, as well as positives on multiple levels.

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